

**ABSTRACT OF THE DISCLOSURE**

A method is provided, the method comprising operating a field emitter array (FEA) to generate at least one of a high electric field and a high electron flux, and exposing the field emitter array (FEA) to at least one gas. The method further comprises generating at least one radical species from the at least one gas exposed to the at least one of the high electric field  
5 and the high electron flux.

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